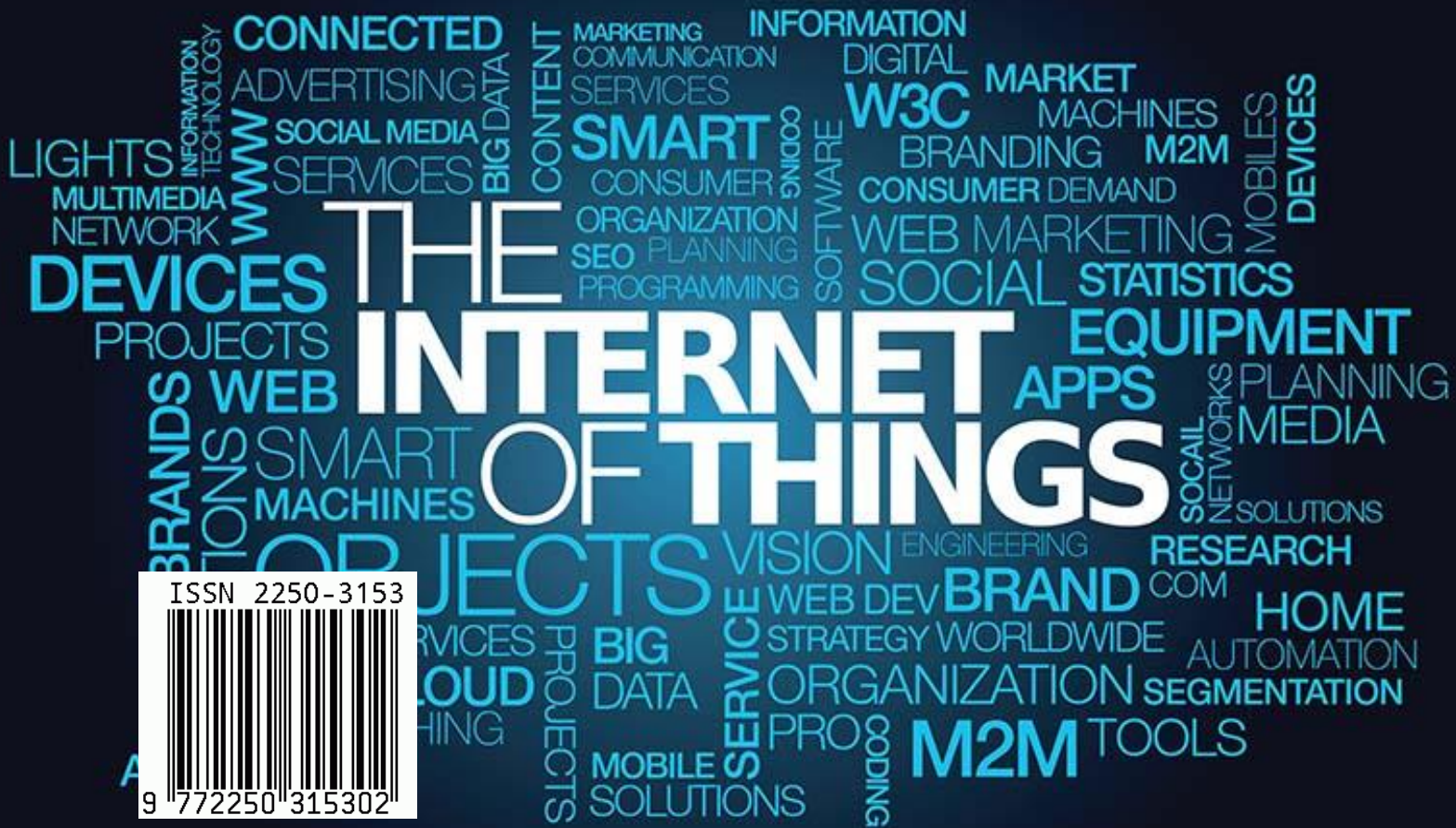


CHALLENGE IN CLOUD COMPUTING QUEST TO ENABLE THE FUTURE OF IOT OR COST EFFECTIVENESS IN CLOUD COMPUTING QUEST TO ENABLE THE FUTURE OF IOT

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Preface

Cloud computing can be a less expensive, quicker, and greener distinct option for an on-premises arrangement. With no foundation speculations, you can get intense software and enormous computing assets rapidly with lower in advance expenses and less administration headaches. Cloud-based arrangements when assessing alternatives for new IT organizations at whatever points a safe, solid, financially savvy cloud alternative exists. Moving your office into the cloud can be a huge choice, with numerous contemplations. This thesis aims to introduce all the constituents and interactions of cloud computing.

The thought behind ubiquitous computing is to encompass ourselves with PCs and software that are precisely tuned to offer us inconspicuous help as we explore through our work and individual lives. Stand out this from the universe of PCs as we probably am aware them now. Others endeavor to offer help yet convey just dissatisfaction, similar to that new Web cam's programmed establishment schedule that didn't exactly perform the majority of the arrangement fundamental and didn't offer any direction on what else expected to be finished.

We are found in a fascinating trap. On one hand, we are bewildered by the guarantee of more prominent efficiency and accommodation. On the other, we are disappointed by devices that are weak and unintuitive. In spite of the fact that much software is simpler to use than any time in recent memory, it feels as if we are a long way from the sci-fi long for subtle PCs that give us a chance to work actually and that work as consistent augmentations of our own work styles. There is trust, be that as it may. The ubiquitous computing development is centered on this apparently removed vision and may help us accomplish the more noteworthy efficiency that sits with it not too far off.

Ubiquitous computing (regularly condensed to "ubicom") alludes to another sort of computing in which the PC totally saturates the life of the client. In ubiquitous computing, PCs turn into an accommodating however undetectable power, helping the client in addressing his or her needs without acting as a burden. In the event that PCs are to be all around, unpretentious, and really accommodating, they must be as little as could be allowed and fit for conveying between them. Innovative developments supporting these goals are now well in progress under the rubrics nanotechnology and wireless computing.

The pattern toward scaling down of PC parts down to a nuclear scale is known as nanotechnology. Nanotechnology includes assembling exceptionally scaled down PCs from individual iotas or atoms going about as transistors, which are the heart of the PC chip. The quantity of transistors in a chip is demonstrative of its energy. In this manner, nanotechnology's compelling scaling down of transistors takes into account great levels of computing energy to be put into little bundles, which can then be inconspicuously concealed. Wireless computing alludes

to the utilization of wireless technology to join PCs to a system. Wireless computing is so appealing in light of the fact that it permits laborers to escape the tie of a system link and access system and communication services from anyplace inside of range of a wireless system. Wireless computing has pulled in huge business enthusiasm, as saw by customer interest for wireless home systems, which can be acquired for a few hundred dollars. The second creator has a three PC wireless system in his home.

Little PCs that impart wirelessly give a fundamental base to ubiquitous computing. Notwithstanding, base is just 50% of the fight. As noted over, the ubiquitous computing development intends to make PCs more supportive and less demanding to utilize. Without a doubt, PCs ought to have the capacity to precisely envision the client's necessities and oblige his or her characteristic communication modes and styles. These subjects are caught inside of the ubiquitous computing development's emphasis on connection mindful computing and normal communication. The guarantee of connection mindfulness is that PCs will have the capacity to see a sufficient client's present circumstance to offer services, assets, or data important to the specific setting. The credits of connection to a specific circumstance change generally, and may incorporate the client's area, current part (mother, little girl, office supervisor, soccer mentor, and so on.), past movement, and full of feeling state. Past the client, setting may incorporate the present date and time, and different protests and individuals in nature. The application of connection may incorporate any mix of these components. For instance, a connection mindful guide may utilize the data that the client is far from home, has no arrangements, and that the time is 6:00 at night to discover that the client could soon be occupied with supper. It would then plan to offer the client direction to adjacent eateries if he or she make such a solicitation.

Presently, utilizing the PC is a piece of the assignment we are endeavoring to fulfill another thing to concentrate on, learn, or do with a specific end goal to perform an objective. The thought behind characteristic collaboration is for the PC to supply services, assets, or data to a client without the client needing to consider the tenets of how to utilize the PC to get them. Thusly, the client is not distracted with the double errands of utilizing the PC and getting the services, assets, or data. Donald Norman, a surely understood scientist in human-computer association, once said that he doesn't need a word processor; he needs a letter essayist something that will permit him to take care of business of composing a letter, without the instrument acting as a burden. The components of ubiquitous computing nanotechnology, wireless computing, setting mindfulness, and regular association offer an effective arrangement of instruments to accomplish the guarantee of ubiquitous computing. To give a superior feeling of what this future holds, we should examine how ubiquitous computing may play out in the working environment.

It's the start of the day and Elaine has a noteworthy presentation to take a shot at for a business call. Two weeks prior, when the getting was situated together, she trained her schedule to calendar two extra gatherings with her group to get ready for the presentation. Better late than never for the second meeting and she strolls into the gathering room that her timetable had saved. The presentation on the gathering room entryway records the title of the meeting and verifies participants as they enter. The monster "work board" on one mass of the room has preloaded the majority of the reports identified with the presentation and is sitting tight for data. At the point when everyone has touched base for the meeting, the showcase on the conference room entryway records the meeting as "in advancement" and diminishes the window to minimize diversion from the occupied lobby outside.

The UbiquiTrain framework is in view of a database of preparing substance to which clients join through desktop PCs and wireless handheld frameworks. UbiquiTrain burdens preparing substance as indicated by a calculation that incorporates various setting related signs. The principal signal fixates on the client's timetable. Case in point, if there is an up and coming meeting called by the client, Ubiqui-Train would load preparing substance on the best way to lead gatherings. As the meeting time approaches, this preparation substance buoys to the highest priority on the rundown of themes accessible. A second prompt summons the setting of the client's present exercises. In the event that the client is dealing with an assignment identified with a thing on his or her schedule, UbiquiTrain would load comparing substance, too. Case in point, the client dealing with a proposition would signal UbiquiTrain to ring preparing content on composed communication by and large and proposition writing specifically. UbiquiTrain holds content good to go ought to clients request it. The framework does not request the client's consideration.

As befits the way of ubiquitous computing, clients connect with UbiquiTrain in the way that feels most common to them. A few clients converse with the framework, requesting that it demonstrate to them a specific bit of preparation.

Authors



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In the name of Allah, the Most Gracious and the Most Merciful Alhamdulillah, Within the title of Probably the Most Thoughtful Allah and also the Merciful Alhamdulillah, I reward and appreciate Him, consult Him for His aid and Forgiveness, and that I find sanctuary in Allah from the mischiefs of our actions and also the evils of our spirits. He whom Allah guides will not be misled, and he whom Allah misleads will never have a guide. I state that there's no deity but Allah alone, with no companions, and that Muhammad is His 'Abd (worshiper) and Messenger.

First of all, I appreciate Allah (subhana wa taala) for bestowing me with wellness, persistence, and understanding to accomplish this thesis. Because of Allah forgiving me the power for this chance and also the persistence to accomplish my dissertation after the challenges and hard work.

I'm by using this chance to convey my appreciation to everybody who backed me throughout this dissertation. I'm grateful because of friendly, invaluable good critique and their ambitious assistance throughout the project work. I'm truly thankful for them for discussing their illuminating and sincere sights on the quantity of problems associated with the task.

As the internet changes our live; the cloud of things change and impact our live again. The significance of the dissertation within the following: cot tech tackle the two mankind problem in healthcare and energy , helping elderly and handicapped people and holds the promise of fixing the millennium-old human problems of poverty, disease, violence, and poor leadership

At a time when all the world are worried about the fast spreading Zika virus, it is figured out that a wearable device could be an effective tool for preventing it, "You can compute the genome of a human being in less than seven days," "One day we will have the genome sequence of all our patients and we are then in the position to compare [that] data on a regular base with reference data."

This allows clinicians to easily identify defects in the genome and can also be used to compute the chance that someone will get a type of cancer and dedicate it to Egypt, Arab Africa countries and all the world. Then thanks to father Abdel Hamied and mother Aisha who pass away for all the beautiful things that done in me and my life. I am fortunate in my own existence to possess parents who've proven me unconditional assistance and love. Ties and the associations that I've with my parents maintain of meaning in my experience a massive quantity. I appreciate them for all the knowledge and wisdom that they have passed on to their children over the years, due to their freedom, due to their hierarchical part within our household, as well as for several of the

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Cloud of things technology can address the 17 SDG GOALS FOR 2030 Agenda and the 169 Goals.

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Table of Content

1. CHAPTER 1: INTRODUCTION	14
1.1 BUSINESS CONTEXT	14
1.2 RESEARCH BACKGROUND	16
1.2.1 CLOUD DEPLOYMENT STRATEGIES	17
1.2.2 CLOUD DELIVERY MODELS	17
1.2.3 OPPORTUNITIES	18
1.3 RESEARCH OBJECTIVES	18
1.3.1 PURPOSE OF THE RESEARCH	18
1.4 CHALLENGE OF CLOUD TO DEAL WITH IOT AND COT.	18
1.4.1 SECURITY	19
1.4.2 EXECUTION	19
1.4.3 ACCESSIBILITY	19
1.4.4 ADMINISTRATIVE NECESSITIES	19
1.4.5 DATA TRANSFER CAPACITY, NATURE OF SERVICE AND INFORMATION LIMITS	19
1.4.6 SIGNIFICANT SUPPLIERS	19
1.5 UBIQUITOUS IOT APPLICATION	19
1.6 FOUR PILLARS OF IOT.	20
1.7 SMARTER CONNECTED PRODUCTS.	20
2.CHAPTER 2: LITERATURE REVIEW: CLOUD SERVICE ARCHITECTURES	21
2.1 ADVANCED DATA ANALYTICS	21
2.2 APPLICATION DEVELOPMENT TECHNOLOGIES	21
2.3 DNA OF IOT	21
2.4 UBIQUITOUS COMPUTING	22
3.CHAPTER 3: HUMAN-COMPUTER INTERACTION AND ARTIFICIAL INTELLIGENCE	25
3.1 FUTURE OF HCI	26
3.2 ARTIFICIAL INTELLIGENCE	27
3.3 CLOUD COMPUTING AND ARTIFICIAL INTELLIGENCE	27
3.3.1 IBM'S WATSON	28
3.4 FUTURE OF ARTIFICIAL INTELLIGENCE	29
3.4.1 REPETITION WORK WILL BE DONE BY MACHINES	29
3.4.2 COORDINATING DATA TO PROFILES	29
4.CHAPTER 4: SENSOR NETWORKS, WIRELESS TECHNOLOGY AND NANOTECHNOLOGY	30
4.1 SENSOR NETWORKS	30
4.1.1 ARCHITECTURE	32

4.1.2 ENERGY EFFICIENCY	33
4.1.3 LOCALIZATION	34
4.1.4 SENSOR APPLICATIONS	34
4.2 WIRELESS COMMUNICATION	36
4.2.1 EVOLUTION OF TECHNOLOGY	36
4.2.2 DIFFICULTIES IN NEXT GENERATION COMMUNICATION	38
4.2.3 FUTURE PROSPECTIVE OF 5G COMMUNICATION.	39
4.2.4. CLOUD CONVERGENCE WITH 5G	40
4.2.5 MASTER CORE TECHNOLOGY	40
4.3 5G-IU	41
4.4 THE MASTERCORE EQUIPMENTS (MCE)	41
4.5 NANOTECHNOLOGY	41
4.5.1 HOW IT STARTED	42
4.5.2 BASIC CONCEPTS OF NANOTECHNOLOGY	42
4.5.3. STRUCTURE OF NANOTECHNOLOGY	44
4.5.4. DANGERS OF NANOTECHNOLOGY	46
5.CHAPTER 5: RESEARCH METHODOLOGY & DATA ANALYSIS	48
5.1 CONTEXT AWARENESS AND NATURAL INTERACTION	48
5.1.1 STRUCTURAL PLANNING OF CLOUD COMPUTING	48
5.1.2 ARCHITECTURE	48
5.2 NATURAL INTERACTION	51
5.2.2 INNOVATION RELATED TO IDENTIFICATION	51
5.3 RELATED WORKS	52
5.4 CLOUD COMPUTING	52
5.4.1 CHALLENGES	53
5.4.2 FUTURE OF CLOUD COMPUTING	55
5.4.3 INTERNET OF THINGS	56
5.4.4 WEARABLE TECHNOLOGIES AND CLOUD COMPUTING	58
5.4.5 TRADITIONAL IT AND CLOUD COMPUTING	58
5.5 Ipv6	59
5.5.1 KEY CHALLENGES	62
5.5.2 HETEROGENEITY	63
5.5.3 NETWORK AND RELIABILITY	64
5.5.4 SECURITY	65
5.6 INTERNET OF THINGS	66
5.6.1 WIRELESS SENSOR NETWORKS (WSN)	67
5.6.2 DATA STOCKING AND ANALYTICS	68
5.6.3 VISUALIZATION	69
5.6.4 APPLICATIONS OF IOT	69
5.6.5 APPLICATION SCHEDULER AND DYNAMIC RESOURCE PROVISIONING IN ANEKA FOR IOT APPLICATIONS	70
5.6.6 FUTURE OF IOT	71
5.7 RESEARCH METHODOLOGY	75
5.7.1 METHOD SELECTION	75
5.8 DATA ANALYSIS	76
5.8.1 RESEARCH QUALITY	77
5.8.2 EMPIRICAL STUDY	78
DISCUSSION	82
6. CHAPTER 6 - THE CLOUD OF THINGS	85
6.1 WHY IOT SHOULD BE THE CLOUD OF THINGS	86
6.2 THE INTERNET OF THINGS AND CLOUD COMPUTING	87

6.2.1 HOW THE INTERNET OF THINGS WILL CHANGE CLOUD COMPUTING	87
6.3 MOBILE CLOUD COMPUTING	87
6.3.1 BACKGROUND	88
6.3.2 MOBILE COMPUTING	88
6.4 CLOUD COMPUTING	89
6.4.1 FRAMEWORK	90
6.4.2 FUNCTIONS:	90
6.5 ARCHITECTURE OF MOBILE CLOUD COMPUTING	91
6.5.1 CONCEPT AND PRINCIPLE	91
6.5.2 CHALLENGES	92
6.6 OPEN RESEARCH ISSUES	92
6.6.1 ARCHITECTURAL ISSUES	92
6.6.2 ENERGY-EFFICIENT TRANSMISSION:	92
6.6.3 CONTEXT-AWARENESS ISSUES:	92
6.6.4 LIVE VM MIGRATION ISSUES:	92
6.6.5 MOBILE COMMUNICATION CONGESTION ISSUES:	92
6.6.6 TRUST, SECURITY, AND PRIVACY ISSUES:	92
6.7 CHALLENGES AND SOLUTIONS	93
6.7. 1 LIMITATIONS OF MOBILE DEVICES:	93
6.7.2 QUALITY OF COMMUNICATION:	94
6.7.3 DIVISION OF APPLICATION SERVICES:	94
6.8 RELATED WORK	94
6.8.1 AUGMENTED EXECUTION:	94
6.8.2 FLEXIBLE PROGRAMS:	95
6.8.3 MIGRATION OPTIMIZATION:	96
6.9 OPEN RESEARCH ISSUES	97
6.9.1 DATA DELIVERY	97
6.9.2 TASK DIVISION	97
6.9.3 BETTER SERVICE	97
6.10 MAI VERSUS XAAS: THE LONG TAIL AND THE BIG SWITCH	98
6.10.1 PUBLIC CLOUD WORKLOADS: 2015 VS. 2020	98
6.10.2 PUBLIC CLOUD PROVIDER: THE PERFECT IoT-BACKEND	99
6.10.3 USE CASES IN THE INTERNET OF THINGS	99
6.11 PUBLIC CLOUD PROVIDERS CONTINUOUSLY NEED TO EXPAND THEIR PORTFOLIO	100
6.12 THE CLOUD OF THINGS ARCHITECTURE	101
6.12.1 FOUR DEPLOYMENT MODELS	102
6.12.2 VERTICAL APPLICATIONS	103
6.12.5 THREE LAYERS OF IOTSYSTEMS	114
6.12.6. FOUNDATIONAL TECHNOLOGICAL ENABLERS	115
APPENDIX 1: PHD DRAFT	115
APPENDIX 2: PAPER ON CLOUD COMPUTING	119
APPENDIX 3: PAPER ON INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH & DEVELOPMENT	126
APPENDIX 4: PAPER ON INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH & DEVELOPMENT	130
APPENDIX 5: RESEARCH PROPOSAL ON CHALLENGE IN CLOUD COMPUTING PLATFORM OF INTERNET OF THINGS	138

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documented to advertise imagination pleased from cloud's Web and Issues. Just like a final summarization of the entire manual, the Cloud of things new specifications premiered and explained using the expectancy of creating an average vocabulary for that IoT community.

References

1. "Beyond SCADA: Networked Embedded Control for CyberPhysical Systems," <http://www.truststc.org/scada/>.
2. "Body Sensor Networks: The Next Generation of Health Care," <http://bsn2009.org/>, 2009.
3. "Clicks & Mortar: Web 4.0, The Internet of Things," HammerSmith Group Research Report, <http://thehammersmithgroup.com/images/reports/web4.pdf>, 2009.
4. "Complex Interactive Networks/Systems Initiative: FinalSummary Report," <http://www.azouk.com/212870/Complex-Interactive-NetworksSystems-Initiative-Final-Summa/>.
5. "Global SCADA and Machine-to-Machine (M2M) via SatelliteMarkets," <http://www.giiresearch.com/report/ns87493-global-scada.html>, 2009.
6. "Intelligent Nuclear Power IOT Solutions," <http://www.datang-telecom.com/templates/08Solutions%20Content%20Page/index.aspx?nodeid=147&page=ContentPage&contentid=242,2011>.
7. "Internet 3.0: The Internet of Things." Analysys MasonLimited, 2010.
8. "ITU Internet Reports: The Internet of Things—ExecutiveSummary," 2005, <http://www.itu.int/osg/spu/publications/internetofthings/>.
9. "M2M/Embedded Market Overview, Healthcare Focus, andStrategic Options," http://www.telco2research.com/articles/EB_M2M-Embedded-Overview-Healthcare-Strategic-Options_Summary.
10. www.ijird.com October edition
11. Cloud computing and ubiquitous computing by Assem Abdel Hamed Mousa Ecommerce Technical Support Systems Manager, Cairo, Egypt

Works Cited

1. (Book in Chinese, <http://baike.baidu.com/view/4114160.htm>),Publishing House of Electronics Industry, 2010.
2. (Bookin Chinese, <http://baike.baidu.com/view/5276061.htm>),Publishing House of Electronics Industry, 2011.
3. "'Internet Kill' Switch and IPv9," <http://3g4g.blogspot.com/2010/06/internet-kill-switch-and-ipv9.html>, 2010.
4. "A Smarter Planet: The Next Leadership Agenda," http://www.ibm.com/ibm/ideasfromibm/us/smartplanet/20081106/sjp_speech.shtml, 2008.
5. "Automotive Industry Trends," <http://www.altera.com/end-markets/auto/industry/aut-industry.html>, 2010.
6. "Beyond SCADA: Networked Embedded Control for CyberPhysical Systems," <http://www.truststc.org/scada/>.
7. "Body Sensor Networks: The Next Generation of Health Care," <http://bsn2009.org/>, 2009.
8. "CASAGRAS and The Internet of Things: Definition and VisionStatement Agreed," <http://www.rfidglobal.eu/userfiles/documents/CASAGRAS26022009.pdf>, 2009.

9. "Clicks & Mortar: Web 4.0, The Internet of Things," HammerSmith Group Research Report, <http://thehammersmithgroup.com/images/reports/web4.pdf>, 2009.
10. "Complex Interactive Networks/Systems Initiative: FinalSummary Report," <http://www.azouk.com/212870/Complex-Interactive-NetworksSystems-Initiative-Final-Summa/>.
11. "Connected World 100, 2102," <http://www.connectedworldmag.com/M2MTop100.aspx>.
12. "Extracting Value From the Massively Connected World of2015," www.gartner.com/DisplayDocument?id=476440.
13. "Global SCADA and Machine-to-Machine (M2M) via SatelliteMarkets," <http://www.giiresearch.com/report/ns87493-global-scada.html>, 2009.
14. "Government 2.0: The Smarter Planet Initiative and Obama'sInauguration Speech," <http://aaronkim.wordpress.com/2009/01/21/government-20-the-smarter-planet-initiative-and-obamas-inauguration-speech/>, 2009.
15. "High Confidence Software and Systems: Cyber PhysicalSystems," <http://blackforest.stanford.edu/eventsemantics/Gill-CPSWeek-WEBS.pdf>.
16. "Intelligent Nuclear Power IOT Solutions," <http://www.datang-telecom.com/templates/08Solutions%20Content%20Page/index.aspx?nodeid=147&page=ContentPage&contentid=242,2011>.
17. "Internet 3.0: The Internet of Things." Analysys MasonLimited, 2010.
18. "ITU Internet Reports: The Internet of Things—ExecutiveSummary," 2005, <http://www.itu.int/osg/spu/publications/internetofthings/>.
19. "M2M/Embedded Market Overview, Healthcare Focus, andStrategic Options," http://www.telco2research.com/articles/EB_M2M-Embedded-Overview-Healthcare-Strategic-Options_Summary.
20. "Obama Announces \$3.4 Billion in Grants for Smart Grid,"<http://liveearth.org/en/liveearthblog/obama-announces-billions-for-smart-power-grid>, 2009.
21. "Obama Says IT Is Critical to Transforming Healthcare," <http://www.healthcareitnews.com/news/obama-says-it-critical-transforming-healthcare>, 2009.
22. "Overview of Mobile Resource Management Systems (MRM)Market," <http://events.eft.com/truckit/presentations/1ClemDriscoll.pdf>.
23. "Pervasive Internet and Smart Services Market Forecast," http://www.harborresearch.com/HarborContent/2009%20PIMF%20Brochure_2009.pdf, 2009.
24. "Remote Product Services Extend Benefits of Machine-to-Machine Solutions," <http://www.arcweb.com/research/strategy-reports/2011/08/remote-product-services-extend-benefits-of-machine-to-machine-solutions.aspx>.
25. "SAP: Internet of Things: An Integral Part of the FutureInternet," http://services.future-internet.eu/images/1/16/A4_Things_Haller.pdf, 2009.
26. "State of the Satellite Industry Report," <http://www.sia.org/PDF/2011%20State%20of%20Satellite%20Industry%20Report%20%28June%202011%29.pdf>, 2011.
27. "The EPCglobal Architecture Framework," http://www.gs1.org/gsm/kc/epcglobal/architecture/architecture_1_4-framework-20101215.pdf, 2010.
28. "The Internet of Things," https://www.mckinseyquarterly.com/The_Internet_of_Things_2538, 2010.
29. "The Six Pillars," http://www.constructech.com/news/articles/article.aspx?article_id=5625.

30. "The Rise of the Machines," <http://www.energysavingtrust.org.uk/Publications2/Corporate/Research-and-insights/The-rise-of-the-machines-a-review-of-energy-using-products-in-the-home-from-the-1970s-to-today>
31. "Three Key Enablers for Broadband Wireless," <http://www.telecom-cloud.net/2010/07/12/3-key-enablers-for-broadband-wireless>, 2010.
32. "Machine-To-Machine (M2M) and Smart Systems Forecast,2010–2014," Harbor Research, 2010.
33. "Ubiquitous Sensor Networks (USN)," ITU-T Report, http://www.itu.int/dms_pub/itu-oth/23/01/T23010000040001PDFE.pdf, 2008.
34. 23(3): 305–326, May 2008.
35. 3GPP Technical Reports, "Systems Improvements for Machine-Type Communications," http://www.3gpp.org/ftp/Specs/archive/23_series/23.888/, 2011.
36. Thiagarajan et al., "VTrack: Accurate, Energy-Aware RoadTraffic Delay Estimation Using Mobile Phones," <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.161.8484&rep=rep1&type=pdf>, 2009.
37. Seema et al., "Towards Efficient Wireless Video Sensor Networks: A Survey of Existing Node Architectures and Proposal for A Flexi-WVSNP Design," <http://mre.faculty.asu.edu/WVSNPsurvey.pdf>, 2011.
38. Adam Dunkels et al., "IP for Smart Objects: Internet Protocol for Smart Objects (IPSO) Alliance," <http://www.sics.se/~adam/dunkels08ipso.pdf>, 2008.
39. Adam Greenfield, *Everyware: The Dawning Age of Ubiquitous Computing*, New Riders Publishing, 2006.
40. Andreas Rasche, "Adaptive and Reflective Middleware," http://www.dcl.hpi.uni-potsdam.de/teaching/mds_07/mds10_adaptivemw.pdf.
41. Schilit, N. Adams, and R. Want, "Context-Aware Computing Applications" IEEE Workshop on Mobile Computing Systems and Applications, 1994.
42. Schilit, N. Adams, and R. Want, "Context-Aware Computing Applications," Proceedings of the 1994 First Workshop on Mobile Computing Systems and Applications, IEEE, 1994.
43. Bob Emmerson, "Networks in 2015: A Vision and a Strategy," <http://www.tmcnet.com/voip/0808/networks-in-2015-a-vision-and-a-strategy.htm>, 2008.
44. Bonfiglio, Annalisa. *Wearable Monitoring Systems*. New York: Springer, 2014. Print.
45. Brian Bremner, "Service Robots: Rise of the Machines (Again)," 2011, http://www.businessweek.com/magazine/content/11_11/b4219032532458.htm.
46. Bruce Sterling, *Shaping Things*, MIT Press, 2005.
47. Amarawardhana et al., "Case Study of WSN as a Replacement for SCADA," http://ieeexplore.ieee.org/xpl/freeabs_all.jsp?arnumber=5429891, 2009.
48. Casaleggio Associati, "The Evolution of Internet of Things," 2011.
49. Catlett, C. *Cloud Computing and Big Data*. Amsterdam: IOS, 2013. Print.
50. CERP-IoT, "Internet of Things: Strategic Research Roadmap," http://www.grifs-project.eu/data/File/CERP-IoT%20SRA_IoT_v11.pdf, 2009.
51. Cloud Computing: ICT's Tower of Babel
52. Commission of the European Communities, "Internet of Things: An Action Plan for Europe," June 2009.
53. Brezis, P. Krugman, and D. Tsiddon, "Leapfrogging in International Competition: A Theory of Cycles in National Technological Leadership, *The American Economic Review*, 1993.
54. EPoSS, "Internet of Things in 2020: Roadmap for the Future," <http://www.smart-systems-integration.org/public>, 2008.

55. Erico Guizzo, "The Rise of the Machines," 2008, <http://spectrum.ieee.org/robotics/industrial-robots/the-rise-of-the-machines/1>.
56. Gartner Report, "Who's Who in Middleware," <http://www-01.ibm.com/software/info/websphere/partners4/articles/gartner/garwho.html#fig1>, 2004.
57. Gerald Santucci, "The Internet of Things: A Window to Our Future," <http://www.theinternetofthings.eu/content/g%C3%A9rald-santucci-internet-things-window-our-future>, 2011.
58. Hakan Soderstrom, "U-Korea, U-Japan, U-Fever," <http://www.soderstrom.se/?p=24>, 2008.
59. Hayes, J. "Clout of the Cloud (cloud Computing)." Engineering & Technology: 60. Print.
60. Honbo Zhou,
61. Honbo Zhou,
62. <http://www.m2mexpo.com/>.
63. Hunter, P. "Cloud Aloud [cloud Computing in Enterprises]." Engineering & Technology: 54. Print.
64. Jackson, Kevin. OpenStack Cloud Computing Cookbook. Birmingham: Packt, 2014. Print.
65. Jean-Marie Bonnin et al., "Mobile Wireless Middleware: Operating Systems and Applications," Proceedings of Mobilware, 2009.
66. Jerry Li, "From Strong to Smart: The Chinese Smart Grid and Its Relation with the Globe," <http://www.aepfm.org/link.php>, 2009.
67. Joel Young, "Web Services Put M2M in the Cloud," <http://www.eetimes.com/design/embedded/4219528/Web-services-puts-M2M-in-The-Cloud>, 2011.
68. Journal of Computer Science and Technology
69. Kevin Ashton, "That 'Internet of Things' Thing," RFID Journal ,22, July 2009.
70. Khajeh-Hosseini, A., Greenwood, D., Sommerville, I., (2010a). Cloud Migration: A Case Study of Migrating an Enterprise IT System to IaaS. Submitted to IEEE CLOUD 2010
71. Khajeh-Hosseini, A., Sommerville, I., Sriram, I., (2010b). Research Challenges for Enterprise Cloud Computing. Submitted to the 1st ACM Symposium on Cloud Computing, SOCC 2010.
72. Kling, Andrew A. Cloud Computing. Print.
73. Krug, Harald. Nanotechnology. Weinheim: Wiley-VCH ;, 2014. Print.
74. Lumsden, Joanna. Human Computer Interaction and Innovation in Handheld, Mobile, and Wearable Technologies. Hershey, PA: Information Science Reference, 2013. Print.
75. M. Wang et al., "Middleware for Wireless Sensor Networks: A Survey," <http://www.ccf.org.cn/web/resource/8301.pdf>, 2008.
76. M2M Research, <http://www.beechamresearch.com/>.
77. Machina Research, <http://www.machinaresearch.com/>.
78. Machine 2 Machine, "Innovation in M2M," <http://machine2twomachine.wordpress.com/2011/08/25/machine-2-machine-internet-of-things-real-world-internet/>, 2011.
79. Mann, Steve. "Introduction: On the Bandwagon or beyond Wearable Computing?" Personal Technologies: 203-07. Print.
80. Marks, Eric A., and Bob Lozano. Executive's Guide to Cloud Computing. Hoboken, N.J.: Wiley, 2010. Print.
81. McEwen, Adrian, and Hakim Cassimally. Designing the Internet of Things. Chichester: Wiley, 2014. Print.

82. Mi Li et al., "Middleware for Sensor Network," <http://www.eecg.toronto.edu/~jacobsen/courses/ece1770/slides/snetworks.ppt>.
83. Miao-Miao Wang et al., "Middleware for Wireless Sensor Networks: A Survey,"
84. Michael Schagrin, U.S. Department of Transportation, "National VII Architecture: Data Perspective," www.its.dot.gov/press/ppt/2008TRB682_National%20Architecture.ppt, 2008.
85. Network and Information Technology Research and Development(NITRD), <http://www.cra.org/govaffairs/blog/tag/nitrd>.
86. Ning, Huansheng. Unit and Ubiquitous Internet of Things. Boca Raton: CRC, Taylor & Francis Group, 2013. Print.
87. Ovidiu Vermesan et al., "Internet of Things Strategic Research Roadmap," CERP-IoT, http://www.internet-of-things.research.eu/pdf/IoT_Cluster_Strategic_Research_Agenda_2011.pdf, 2011.
88. P. Carter et al., "Delivering Next-Generation Citizen Services," IDC Report, http://www.cisco.com/web/strategy/docs/scc/whitepaper_cisco_scc_idc.pdf.
89. P. Magrassi et al., Computers to Acquire Control of the Physical World , Gartner research report T-14-0301, September 28, 2001.
90. Powell, Steven. Wireless Technology Applications, Management, and Security. Dordrecht:
91. Qamar, S., Lal, N., Singh, M., (2010). Internet Ware Cloud Computing: Challenges. (IJCSIS) International Journal of Computer Science and Information Security, Vol. 7, No. 3, March 2010.
92. Richard MacManus, "DASH7: Bringing Sensor Networking to Smartphones," http://www.readwriteweb.com/archives/dash7_bringing_sensor_networking_to_smartphones.php, 2010.
93. Rountree, Derrick, and Ileana Castrillo. The Basics of Cloud Computing Understanding the Fundamentals of Cloud Computing in Theory and Practice. Burlington: Elsevier Science, 2013. Print.
94. S. Methley et al., "Wireless Sensor Networks, Final Report," <http://stakeholders.ofcom.org.uk/binaries/research/technology-research/wsn3.pdf>, 2008.
95. S. Soro et al., "A Survey of Visual Sensor Networks," <http://www.hindawi.com/journals/am/2009/640386/>, 2009.
96. Sahin Albayrak et al., "Smart Middleware for Mutual Service-Network Awareness in Evolving 3GPP Networks," <http://pure.ltu.se/portal/files/2154720/04554377.pdf>, 2008.
97. Sam Lucero, "Horizontal Standards for M2M," http://www.abiresearch.com/research_blog/1650, 2011.
98. Sam Lucero, "Maximizing Mobile Operator Opportunities in M2M," ABI Research, 2010.
99. Sasu Tarkoma, Mobile Middleware: Architecture, Patterns and Practice , Wiley, 2009.
100. Singh, Swarnpreet. "Cost Breakdown of Public Cloud Computing and Private Cloud Computing and Security Issues." International Journal of Computer Science and Information Technology (2012): 17-31. Print.
101. Smarter Earth: Deciphering Internet of Things
102. Sosinsky, Barrie A. Cloud Computing Bible. Indianapolis, IN: Wiley , 2011. Print.
103. Springer, 2014. Print.
104. T. Hartman, "The Convergence of Building Controls, IT," <http://hpac.com/bas-controls/convergence-building-controls-0509/index.html>, 2009.
105. T. Oda and K. Takeuchi, "Driving Safety Support System in UTMS21," <http://www.utms.or.jp/english/inter/paper/seoul06.pdf>.
106. Tan, Hock Guan, and Patrice Siat Moy Choong. Wireless Technology. Singapore: Pearson/Prentice Hall, 2015. Print.

107. Toon Norp, "Mobile Network Improvements for Machine Type Communications," http://docbox.etsi.org/Workshop/2010/201010_M2MWORKSHOP/06_M2MGlobalCollaboration/Norp_TNO_mobileNtwImprovements.pdf, 2010.
108. U.S. Department of Energy, "Grid 2030: A National Vision for Electricity's Second 100 Years," <http://www.ferc.gov/eventcalendar/files/20050608125055-grid-2030.pdf>.
109. Vision and Challenges for Realizing the Internet of Things ,European Union, 2010, ISBN 9789279150883.
110. Wayne, Teddy. Wireless Technology Prospects and Policy Options. Washington, D.C.: National Academies, 2013. Print.
111. Wheeler, William. Integrating Wireless Technology in the Enterprise. Amsterdam: Digital, 2014. Print.
112. Window Security, (2010), <http://www.windowsecurity.com/articles/Security-Cloud-Trustworthy-Enough-Your-Business.html> . Retrieved on April 11, 2010.
113. ZTE Corporation, "Opportunities, Challenges, and Practices of the Internet of Things," http://www.en.zte.com.cn/endata/magazine/zte technologies/2010/no5/articles/201005/t20100510_184418.html, 2010.
114. www.ijird.com October edition 2013, sept edition 2015-10-14
115. Cloud computing and ubiquitous computing by Assem Abdel Hamed Mousa Ecommerce Technical Support Systems Manager, Cairo, Egypt
116. CHALLENGE IN CLOUD COMPUTING QUEST TO ENABLE THE FUTURE OF IOT OR COST EFFECTIVENESS IN CLOUD COMPUTING QUEST TO ENABLE THE FUTURE OF IOT
117. Globe com 2015, IEEE, Industrial Poster Presentation
118. WSIS may 2015, High Level Speaker, Switzerland.
119. United nation high level meeting, sept 2015, NY
120. United nation high level meeting, DEC 2015, NY
121. Speaker in Aviation conference for future strategy planning in Egypt, Nov 2013.
122. The 1st keynote speaker in Vietnam conference <http://www.iccceg.org/keynote.html> In May.
123. Keynote speaker Digital Africa 2014, Nigeria in May.
124. Speaker, World comp 2014, Las Vegas, USA in July.
125. Chief guest, ICIDRET 2014, India in August.
126. Chief Guest, International Congress Thailand, Nov 2014.
127. <https://onedrive.live.com/?id=94B6ABA85272A3A5%21443&cid=94B6ABA85272A3A5&group=0>
128. <http://globecom2015.ieee-globecom.org/program/industry-program/posters>
129. <http://www.ijird.com/index.php/ijird/issue/view/6167>
130. <http://www.ijird.com/index.php/ijird/article/view/39778>
131. <http://www.ijird.com/index.php/ijird/article/view/39777>
132. <https://www.slideshare.net/assemam> search by :assem abdl hamied moussa/assem abdel hamed mousa/assem moussa/assem mousa